

Date: Monday 5/12/2006 3:45 PM  
User: Kim Johnston

## Process Sheet

Customer : CL/DAR001 Dart Helicopters Services Drawing Name : SKID TUBE ASSEMBLY  
Job Number : 26869A  
Estimate Number : 10023  
P.O. Number : N/A Part Number : D205634041  
This Issue : 5/12/2006 S.O. No. : N/A Drawing Number : D2580 REV C  
Prsht Rev. : MC Project Number : N/A  
First Issue : N/A Type : LANDING GEAR Drawing Revision : C  
Previous Num : 26869A Material : N/A  
Written By : *See comment below* Due Date : 5/20/2006 Qty: 1 Um: Each  
Checked & Approved By : *06.05.02*  
Comment : Est Rev: N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ  
Est Rev: O 06.02.28 Added paperwork EC

## Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 D25001190 Ext'n -I' Beam Tube 4"



Comment: Qty.: 1.0400 Each(s)/Unit Total : 1.0400 Each(s)

Pick:

Qty Part Number Description Batch  
1 D2500-1-190 Skid Tube Extrusion *B24669 DP 06-5-3*

2.0 DC DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Photocopy D205-634 bluefile & type labels per PPP D205-634 CHG001

*N/A See B26869*

3.0 D2596 205 Web



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part Number Description Batch  
1 D2596 205 Web *B26750 28 06 05 04*

4.0 LANDING GEAR 1 LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1- Inspect mat'l D2500-1-190 for damage

2-Cut D2500-1-190 per Dwg D2580 if necessary Deburrr ends

3-Drill pilot holes using drill jig DT 8149

4-Acid etch and Alodine tube per QSI 005 4.1

*DP 06-5-3*  
*pm 06-05-03*

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 5/1/2006 3:46:58 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Part Helicopters Services

Drawing Name: SKID TUBE ASSEMBLY

Job Number: 26869A

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

5-Open holes to 0.500" as per Dwg D2580 without cutting fluid

2T 06-05-04

6-Countersink holes as per Dwg D2580 without cutting fluid

2T 06-05-04

7-Deburr and blow out all chips from inside of tube

2T 06-05-04

8-Bond web in place per QSI 015. Allow 12 Hrs. cure time before cutting

Pick:

Qty Part Number Description Batch

A/R Sikaflex-291 H100480

Sikaflex expire date: 06-11-01

Start Time: 2:00 2T 06 05 04

Fin Time: 06-58

5.0

BENDING

BENDING MACHINE



Comment: BENDING MACHINE

Bend as per program D2580.C on CNC Bender and Folio FT009

DP05-5-8

6.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Cut tubes as per Dwg. D2580

DP06-5-8

2-Deburr ends after cutting. Remove alodine from around holes

DP06-5-9

7.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

8.0

D25763

Step (Machining Detail)



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2576-3

Step

222141 BE 06-05-09

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action		Section B		Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date				

NOTE: Date & initial all entries

Date:  
User:

Monday, 5/1/2006 3:46:59 PM  
Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dar Helicopters Services

Drawing Name: SKID TUBE ASSEMBLY

Job Number: 268694

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

9.0

D2579

Crossbolt Spacer



Comment: Qty.: 20.0000 Each(s)/Unit Total : 20.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
20	D2579	Spacers	B25977 BE 05-06-11 (1)

10.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Prepare tube for welding D2576-3 Step Remove alodine as required. BE 05-06-11 (1)

2-Weld step D2576 as per Dwg. D2580 and QSI 004

A/R

Aluminum Rod

m19101 BE 05-06-11 (1)

3-Weld crossbolt spacers D2579 as per Dwg. D2580 and QSI 004. For D2579 side, pass 3/8" drill, weld other side, pass 3/8" drill

spacers, weld one

A/R

Aluminum Rod

m19101 BE 05-06-11 (1)

4-Grind welds as per Dwg D2580 Grind flush ridge made from bending

RT 05-06-11

5-Drill holes for wearplates using DT 8217 Open holes to 19/64", adjust stopper not to hit web. Deburr

pm 06-05-17 (1)

6-Counterbore crossbolt spacers to 7/16" ID x 1.0" deep as per Dwg D2580. Deburr holes

pm 06-05-17 (1)

7-Drill pilot holes for aft cap using DT 8215 Open holes to #6 Drill bit. Deburr

pm 06-05-17 (1)

8-Drill pilot holes for Tow ring using DT8091, open to .640" and Deburr

pm 06-05-17 (1)

11.0

QC5/9

WELD INSPECTION



Comment: WELD INSPECTION

Inspect weld and Counterbore work to Step 20

JO 05-18 (1)  
PD 06-05-19

12.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Powder Coat White (Ref: 4.3.5.2) as per QSI 005 4.3

a.m 06-07-13 (1)

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SKID TUBE ASSEMBLY

Job Number: 26869A

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

DL 06/07/13 (1)

14.0

D25771

Wearplate Fwd



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2577-1	Wearplate	B25137

15.0

D25773

Wearplate Aft



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2577-3	Wearplate	B25171

16.0

D25775

Wearplate, Centre



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2577-5	Wearplate	B24199

17.0

ALS71032130

Insert



Comment: Qty.: 44.0000 Each(s)/Unit Total : 44.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
44	ALS7-1032-130	Inserts	M19393

FR

18.0

AN960JD10L

Washer



Comment: Qty.: 44.0000 Each(s)/Unit Total : 44.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
44	AN960JD10L	Inserts washers	M101291

AL

06/07/13 (1)

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed:                      Date:

[illegible]

**NOTE:** Date & initial all entries

W79-02-DA-E 81151A

Page: 726



Date: Monday, 5/1/2006 3:46:59 PM  
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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SKID TUBE ASSEMBLY

Job Number: 26869A

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

19.0

AN34A

Bolt



Comment: Qty.: 44.0000 Each(s)/Unit Total : 44.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
44	AN3-4A	Bolt	M18310

20.0

D25941

Plug



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
16	D2594-1	<del>O-RING</del> plug	B25593

21.0

D25943

O-Ring



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
16	D2594-3	<del>Plug</del> O-ring	B24104

22.0

D2855

Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Cap

Batch: B23925A

23.0

AN35A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

Batch: M15205

24.0

AN960JD10L

Washer



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Washer

Batch: M101291

DL 06/07/13 ①

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: LS Date: 06/07/24  
QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

[illegible]

H:\FORMS\Quality Assurance\approved QA\NCRWO RevD

Date: Monday, 5/1/2006 3:46:59 PM  
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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SKID TUBE ASSEMBLY

Job Number: 26869A

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

25.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

1-Install inserts & wearplates as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates

A/R Sikaflex-291 M101193

Sikaflex expire date: 1/06

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive

A/R Sikaflex-291 M101193

Sikaflex expire date: 1/06

5-Wing Walk as per Dwg D2580 and QSI 005 4.4

M101200

Batch:

FC 06 0714

①

DL  
06/07/13 ①

26.0

QC5

INSPECT WORK TO CURRENT STEP



M101200



①

Comment: Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

27.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Inspection Level 21

06.07.20

Job Completion



W 06.07.19

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date				

NOTE: Date & initial all entries



DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2580	REV. C SHEET 1 OF 2
DATE 98.08.26		TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS
A	96.09.16	NEW ISSUE	
B	96.12.02	AS MANUFACTURED	
C	98.08.26	REDRAWN, INCLUDED DEO 9094/9097	

RELEASED  
98/09/17 DS

QTY	Part Number	Description
X	D2580-041	SKIDTUBE ASSEMBLY
*	D2500-1	EXTRUSION
1	D2596	205 WEB
1	D2575	AFT CAP
1	D2576 - 3	STEP
20	D2579	CROSS BOLT SPACER
16	D2594-1	PLUG
16	D2594-3	O-RING
1	D2577-1	WEARSHOE
1	D2577-3	WEARSHOE
1	D2577-5	WEARSHOE
44	ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or ALS4-1032-130	INSERT
46	AN3-4A	BOLT
46	AN960JD10L	WASHER

# 00.08.26  
UP 00.08.28

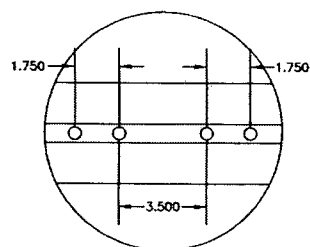
EFFECTIVE DEOS  
98/12/14  
DEO 9124  
DED 9183

#### GENERAL NOTES:

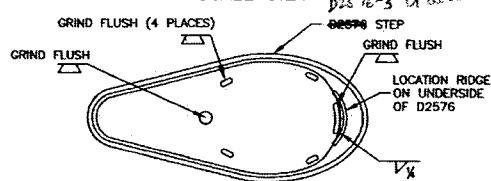
- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) LENGTH OF D2500-1 EXTRUSION BEFORE BENDING = 190 INCHES \*
- 3) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) USE DART DRILL TEMPLATE TD2577-205 TO LOCATE AND DRILL  $\varnothing 0.297$  HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (44 PLACES) AFTER FINISH. INSTALL AN3-4A BOLTS AND AN960JD10L WASHERS WITH SIKAFLEX-241.
- 6) WELDING TO BE DONE PER DART QSI 004.
- 7) FINISH:  
ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB  
POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4
- 8) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES).

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 26869A

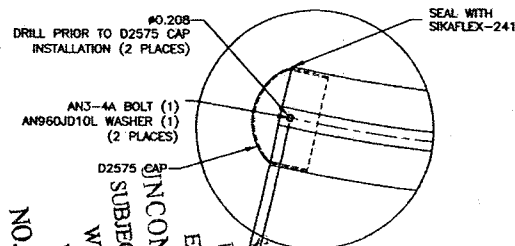
DETAIL A  
SCALE 5:24



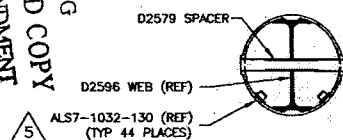
DETAIL B  
SCALE 5:24



DETAIL C  
SCALE 5:24

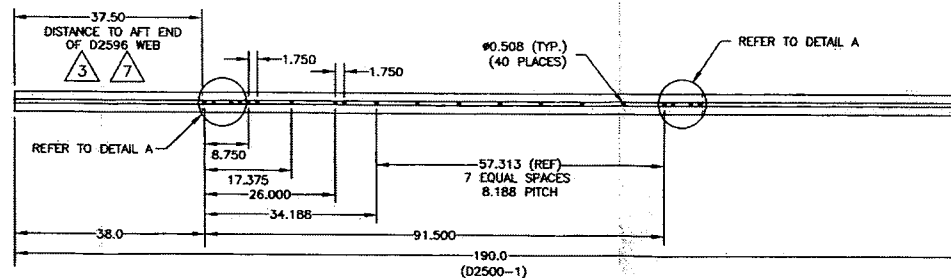


SECTION D-D  
SCALE 5:24

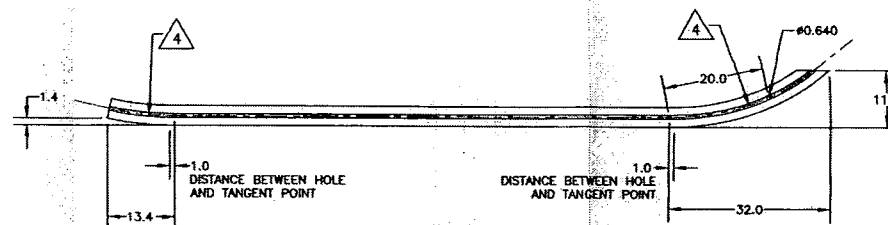


AFTER DRILLING AND BENDING ASSEMBLY PERFORM THE FOLLOWING FOR #0.508 HOLES ONLY:  
1. CHAMFER HOLE 0.050 X 45°  
2. INSERT D2579 SPACER (20 PLACES)  
3. WELD INTO PLACE AND GRIND FLUSH  
4. C'BORE D2579 SPACER TO #0.437 X 1.00 DEEP

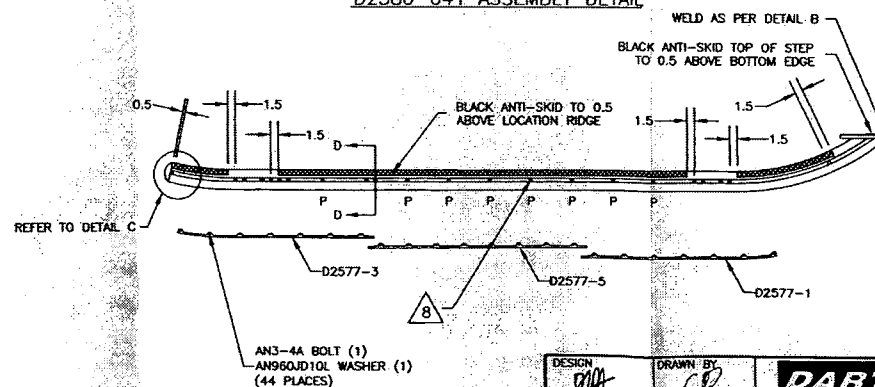
D2580-1 DRILLING DETAIL



D2580-1 BENDING AND CUTTING DETAIL



D2580-041 ASSEMBLY DETAIL



RELEASED  
98/09/17 DS

DESIGN DART	DRAWN BY DART	<b>DART</b> DART AEROSPACE LTD HAMMERSBURY, ONTARIO, CANADA	REV. C
CHECKED DART	APPROVED DART	DRAWING NO. D2580	SHEET 2 OF 2
DATE 98.08.26		TITLE 205 SKIDTUBE ASSEMBLY	SCALE 1:24